AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the Application.

1. (Original) A method for managing the operation of a frequency translating repeater within a wireless local area network (WLAN) environment, the frequency translating repeater capable of establishing a first radio frequency (RF) link having a first and second frequency channel, the WLAN environment governed by a communication protocol, the WLAN environment capable of having at least another WLAN node compliant with the communication protocol and capable of establishing a second RF link to the frequency translating repeater on either the first or second frequency channel, the method comprising:

establishing a management link with the at least another WLAN node at a higher layer of the communication protocol; and

configuring at least one of the first and second RF link based on a message associated with the communication protocol and transferred on the management link between the frequency translating repeater and the at least another WLAN node.

2. (Original) The method according to claim 1, wherein the establishing a management link includes detecting a waveform modulated in accordance with the higher layer of the communication protocol on at least one of the first and the second RF link.

3. (Original) The method according to claim 1, wherein the establishing a management link includes modulating a waveform in accordance with the higher layer of the communication protocol on at least one of the first and the second RF link.

4. (Original) The method according to claim 1, wherein the configuring at least one of the first and second RF links includes configuring the frequency translating repeater to translate a signal transmitted on one of the first and the second RF link to the other of the first and the second RF link based on the message.

5. (Original) The method according to claim 1, wherein the configuring at least one of the first and second RF links includes configuring the frequency translating repeater to translate a signal transmitted on one of the first and the second frequency channel to an other of the first and the second frequency channel based on the message.

6. (Original) The method according to claim 1, wherein the configuring at least one of the first and second RF links includes configuring the frequency translating repeater change the frequency of at least one of the first or second frequency channels.

7. (Original) The method according to claim 1, further comprising: monitoring at least the first and second RF links; and detecting whether a signal is present on one of the at least first and second RF links.

8. (Original) The method according to claim 1, wherein the configuring at least one of the first and second RF links includes configuring the frequency translating repeater change transmission power of at least one of the first or second frequency channels.

9. (Original) The method according to claim 8, further comprising: translating the detected signal:

to the second frequency channel if the signal is detected on the first frequency channel of the first RF link for a time interval,

to the first frequency channel if the signal is detected on the second frequency channel of the first RF link for the time interval.

10. (Original) The method according to claim 9, wherein the time interval corresponds to a packet interval associated with the signal.

11. (Original) The method according to claim 9, wherein the time interval is set according to a timer.

12. (Original) The method according to claim 9, wherein the time interval expires when the signal is no longer detected.

13. (Original) A frequency translating repeater capable of use within a WLAN environment governed by a communication protocol and capable of having at least another WLAN node compliant with the communication protocol, the frequency translating repeater comprising:

a transceiver section; and

a processor coupled to the transceiver section, the processor configured to:

be capable of establishing a first RF link having a first and second frequency channel, wherein the at least another WLAN node is capable of establishing an RF with the frequency translating repeater

establish an in-band management link with the at least another WLAN node at a higher layer of the communication protocol, and

configure at least one of the first and second RF links based on a message associated with the communication protocol and transferred on the management link between the frequency translating repeater and the at least another WLAN node.

14. (Original) The frequency translating repeater according to claim 13, wherein the transceiver section includes a detection circuit to detect a waveform, modulated in accordance with the higher layer of the communication protocol, on at least one of the first and the second RF link.

15. (Original) The frequency translating repeater according to claim 13, wherein the transceiver section includes a modulator to modulate a waveform in accordance with the higher layer of the communication protocol, on at least one of the first and the second RF link.

16. (Original) The frequency translating repeater according to claim 13, wherein the processor, in configuring at least one of the first and second RF links is further configured to configure the frequency translating repeater to translate a signal transmitted on one of the first and the second RF link to the other of the first and the second RF link based on the message.

17. (Original) The frequency translating repeater according to claim 13, wherein the processor, in configuring at least one of the first and second RF links is further configured to configure the frequency translating repeater to translate a signal transmitted on one of the first and the second frequency channel to an other of the first and the second frequency channel based on the message.

18. (Original) The frequency translating repeater according to claim 13, wherein the processor, in configuring at least one of the first and second RF links is further configured to configure the frequency translating repeater to translate a signal transmitted on one of the first and the second frequency channel to one of a third and the fourth frequency channel based on the message.

19. (Original) The frequency translating repeater according to claim 17, wherein the processor is further configured to: monitor at least the first and second RF links; and detect whether a signal is present on one of the at least first and second RF links.

20. (Previously Presented) The frequency translating repeater according to claim 19, wherein the processor is further configured to:

translate the detected signal:

to the second frequency channel if the signal is detected on the first frequency channel of the first RF link for a time interval,

to the first frequency channel if the signal is detected on the second frequency channel of the first RF link for the time interval,

to the fourth frequency channel if the signal is detected on the third frequency channel of the second RF link for the time interval, and

to the third frequency channel if the signal is detected on the fourth frequency channel of the second RF link for the time interval.

21. (Original) The frequency translating repeater according to claim 20, wherein the time interval corresponds to a packet interval associated with the signal.

22. (Original) The frequency translating repeater according to claim 20, wherein the time interval is set according to a timer.

23. (Original) The frequency translating repeater according to claim 20, wherein the time interval expires when the signal is no longer detected.

24. (Original) The frequency translating repeater of claim 13, further comprising an intermediate frequency (IF) unit configured to be capable of:

down-converting a signal on the first RF link; and

selecting one of the first and second frequency channels for connection to the transceiver.

25. (Original) The frequency translating repeater of claim 24, wherein the IF unit is further configured to filter the down-converted signal from the one of the first and second frequency channels.

26. (Original) The frequency translating repeater of claim 24, wherein the IF unit if further configured to:

delay the down converted signal from the one of the first and second frequency channel during a period when a signal is not detected on an other of the first and second frequency channel, the delay to prevent a loss of at least a portion of the signal.

27. (Original) The frequency translating repeater of claim 13, further comprising a diode detector coupled to the transceiver and the processor, the diode detector configured to detect at one of: an IF signal, and a baseband signal.

28. (Original) The frequency translating repeater of claim 13, further comprising a matched filter detector coupled to the transceiver and the processor, the matched filter detector configured to detect at one of: an IF signal, and a RF signal.

29. (Previously Presented) The frequency translating repeater of claim 19, further comprising a converter coupled to the transceiver and the processor, the converter configured to convert the signal to a digital signal and wherein the processor in detecting is further configured to:

compare a power level associated with the signal power associated with the first and the second frequency channel;

determine a noise estimate associated with the power level; and

compare the current signal power to this estimate as part of the detection process.

30. (Original) The frequency translating repeater of claim 29, wherein the processor in detecting is further configured to:

integrate the power level associated with the signal for a period of time; and

compare the integrated power level to the power level associated with the signal.

31. (Original) The frequency translating repeater according to claim 13, wherein the frequency translating repeater includes a non-regenerative repeater.

32. (Original) The frequency translating repeater according to claim 13, further comprising a transmit antenna and a receive antenna, and wherein the transceiver is configured to transmit using the transmit antenna and to receive using the receive antenna.

33. (Original) The frequency translating repeater according to claim 32, wherein the transmit antenna and the receive antenna have opposite polarizations.

34. (Original) The frequency translating repeater according to claim 32, wherein the transmit antenna and the receive antenna are directionally isolated.

35. (Original) A non-regenerative frequency translating repeater having a first and a second RF channel, the non-regenerative frequency translating repeater comprising:

a memory;

a processor coupled to the memory, the processor configured to:

receive a signal associated with a data packet on a first RF channel;

translate the signal associated with the data packet to a second RF channel; and

translate the signal from the second RF channel to the first RF channel with no re-generation of the signal; and

a modem coupled to the memory and the processor, the modem configured to control a management link between a wireless local area network and the non-regenerative frequency translating repeater.

36. (Original) The non-regenerative frequency translating repeater according to claim 35, further comprising one or more of the following components: a low noise amplifier (LNA), a power amplifier (PA), an up converter, and a down converter, and wherein the modem further includes a client device and wherein the one or more of the components are shared between the non-regenerative frequency translating repeater and the client device.

37. (Original) The non-regenerative frequency translating repeater according to claim 35, wherein the modem includes an IEEE 802.11 standard compliant device.

38. (Original) The non-regenerative frequency translating repeater according to claim 35, wherein the modem is capable of receiving and transmitting at least a sub-set of messages defined in IEEE 802.11 and derivative IEEE 802.11.

39. (Original) The non-regenerative frequency translating repeater according to claim 35, wherein the modem includes a standard client device

40. (Original) The non-regenerative frequency translating repeater according to claim 35, further comprising a detector for detecting the signal and wherein the detector is shared between the non-regenerative frequency translating repeater and the modem.

41. (Original) The non-regenerative frequency translating repeater according to claim 40, wherein the processor is further configured to demodulate information on the management link using the detector.

42. (Original) The non-regenerative frequency translating repeater according to claim 41, wherein the information on the management link is modulated using amplitude modulation of the signal.

43. (Original) The non-regenerative frequency translating repeater according to claim 41, wherein the modem is further configured to communicate with one or more of: an 802.11 device, a station device (STA), and a data communications device.

44. (Original) The non-regenerative frequency translating repeater according to claim 35, wherein the modem is further configured to communicate with one or more of: an access point (AP), and a repeater.

45. (Original) The non-regenerative frequency translating repeater according to claim 44, wherein the AP includes an 802.11 AP.

46. (Original) The non-regenerative frequency translating repeater according to claim 44, wherein one or more messages transmitted on the management link include: a MAC address of the repeater, and a MAC address of the access point.

47. (Original) The non-regenerative frequency translating repeater according to claim 46, wherein the one or more messages include one or more of the following: a node identification message, an initial configuration message, a configuration modification message, and a performance monitoring message.

48. (Previously Presented) An apparatus for managing the operation of a frequency translating repeater within a wireless local area network (WLAN) environment, the frequency translating repeater capable of establishing a first radio frequency (RF) link having a first and second frequency channel, the WLAN environment governed by a communication protocol, the WLAN environment capable of having at least another WLAN node compliant with the communication protocol and capable of establishing a second RF link to the frequency translating repeater on either the first or second frequency channel, the apparatus comprising:

means for establishing a management link with the at least another WLAN node at a higher layer of the communication protocol; and

means for configuring at least one of the first and second RF link based on a message associated with the communication protocol and transferred on the management link between the frequency translating repeater and the at least another WLAN node.

49. (Previously Presented) The apparatus according to claim 48, wherein the means for establishing a management link includes means for detecting a waveform modulated in accordance with the higher layer of the communication protocol on at least one of the first and the second RF link.

50. (Previously Presented) The apparatus according to claim 48, wherein the means for establishing a management link includes means for modulating a waveform in accordance with the higher layer of the communication protocol on at least one of the first and the second RF link.

51. (Previously Presented) The apparatus according to claim 48, wherein the means for configuring at least one of the first and second RF links includes means for configuring the frequency translating repeater to translate a signal transmitted on one of the first and the second RF link to the other of the first and the second RF link based on the message.

52. (Previously Presented) The apparatus according to claim 48, wherein the means for configuring at least one of the first and second RF links includes means for configuring the frequency translating repeater to translate a signal transmitted on one of the first and the second frequency channel to an other of the first and the second frequency channel based on the message.

53. (Previously Presented) The apparatus according to claim 48, wherein the means for configuring at least one of the first and second RF links includes means for configuring the frequency translating repeater change the frequency of at least one of the first or second frequency channels.

54. (Previously Presented) The apparatus according to claim 48, further comprising:

means for monitoring at least the first and second RF links; and

means for detecting whether a signal is present on one of the at least first and second RF links.

55. (Previously Presented) The apparatus according to claim 48, wherein the means for configuring at least one of the first and second RF links includes means for configuring the frequency translating repeater change transmission power of at least one of the first or second frequency channels.

56. (Previously Presented) The apparatus according to claim 55, further comprising:

means for translating the detected signal:

to the second frequency channel if the signal is detected on the first frequency channel of the first RF link for a time interval, and

to the first frequency channel if the signal is detected on the second frequency channel of the first RF link for the time interval.

57. (Previously Presented) The apparatus according to claim 56, wherein the time interval corresponds to a packet interval associated with the signal.

58. (Previously Presented) The apparatus according to claim 56, wherein the time interval is set according to a timer.

59. (Previously Presented) The apparatus according to claim 56, wherein the time interval expires when the signal is no longer detected.

60. – 71. (Cancelled)